

YANG YANG

Assistant Professor, School of Architecture
Graduate Faculty, Department of Systems and Industrial Engineering
University of Arizona
yangyy@arizona.edu | [Google Scholar](#)

ABOUT

Dr. Yang specializes in AI, machine learning, simulation modeling, and data analytics as they relate to urban and building design. Her research focuses on developing innovative tools and computational solutions that support environmentally and socially responsible design practices across spatiotemporal scales. Her pedagogy emphasizes data driven modeling and visualization addressing contemporary urban challenges.

EDUCATION

2020-24	Ph.D. in Systems Engineering. Cornell University. Concentration 1: City and Regional Planning Concentration 2: Transportation Systems Engineering	Ithaca, NY, US
2018-20	Master of Science. Cornell University.	Ithaca, NY, US
2014-17	Master of Architecture. Tongji University.	Shanghai, CHN
2010-14	Bachelor of Engineering. Tongji University.	Shanghai, CHN

PROFESSIONAL APPOINTMENTS

2026-NOW	Assistant Professor. University of Arizona	Tucson, AZ, US
2025-2026	Assistant Professor. Thomas Jefferson University	Philadelphia, PA, US
2025-NOW	Co-Founder. URBANO.IO	Ithaca, NY, US
2024-25	Visiting Assistant Professor. Thomas Jefferson University	Philadelphia, PA, US
2024-25	Ignite Fellow. Cornell University	Ithaca, NY, US
2022	Adjunct Professor. Thomas Jefferson University	Philadelphia, PA, US
2019-23	Teaching Assistant. Cornell University	Ithaca, NY, US
2017-18	Freelance Architect.	Shanghai, CHN

PUBLICATIONS

Journal Articles

2023	Yang, Y. , Samaranayake, S., Dogan, T., "A Clustering-Based Approach to Quantifying Socio-Demographic Impacts on Urban Mobility Patterns.," Environment and Planning B: Urban Analytics and City Science. (Link)
2023	Yang, Y. , Samaranayake, S., Dogan, T., "Assessing Impacts of the Built Environment on Mobility: A Joint Choice Model of Travel Mode and Duration.," Environment and Planning B: Urban Analytics and City Science. (Link)
2021	Yang, Y. , Li, Y., Kral, K., Hupert, N., Dogan, T., "Urban Design Attributes and Resilience: COVID-19 Evidence from New York City.," Buildings and Cities. (Link)

- 2020 Dogan, T., **Yang, Y.**, Samaranayake, S., Saraf, N., “Urbano: A Tool to Promote Active Mobility Modeling and Amenity Analysis in Urban Design.” Technology | Architecture + Design. ([Link](#))

Conference Proceedings (Peer-Reviewed)

- 2026 Wang, R., **Yang, Y.**, “Modeling Thermal Stress as Network Impedance for Heat-Aware Pedestrian Routing and Neighborhood Planning.” in 2026 Annual Modeling and Simulation Conference (ANNSIM), Orlando, Florida, USA.
- 2026 Smith, J., **Yang, Y.**, “Hyperlocal EV Load Modeling for Resilient Buildings: A Scalable Framework for Urban Decarbonization.” in 2026 ARCC-EAAE International Conference, Atlanta, Georgia, USA.
- 2025 Yan, X., Dogan, T., **Yang, Y.**, “Modeling the Joint Effects of Thermal Comfort, Built Environment, and Socio-Demographics on Active Mobility: A Data-Driven Approach.” in 2025 Annual Modeling and Simulation Conference (ANNSIM), Madrid, Spain. ([Link](#))
- 2023 Du, P., Mavinkere, N., **Yang, Y.**, “Generative Urban Design: A Workflow Integrating Real-Word Mobility, Zoning, and Multi-Objective Simulation.” in 2023 ARCC International Conference, Dallas, Texas, USA. ([Link](#))
- 2022 **Yang, Y.**, Wang, D., Dogan, T., “How the Urban Microclimate and Outdoor Thermal Comfort Can Affect Intra-City Mobility Patterns: Evidence From New York City.” in 2022 Annual Modeling and Simulation Conference (ANNSIM), San Diego, California, USA. ([Link](#))
- 2020 **Yang, Y.**, Samaranayake, S., Dogan, T., “An Adaptive Workflow to Generate Street Network and Amenity Allocation for Walkable Neighborhood Design.” in 2020 Symposium on Simulation for Architecture and Urban Design (SimAUD), online. ([Link](#))
- 2019 **Yang, Y.**, Samaranayake, S., Dogan, T., “Using Open Data to Derive Local Amenity Demand Patterns for Walkability Simulations and Amenity Utilization Analysis.” in 2019 Joint Conference of eCAADe and SIGraDi, Porto. ([Link](#))

Book Chapters

- 2025 Dogan, T., **Yang, Y.**, “Computational Urban Design: A Simulation and Data-driven Approach to Designing a Sustainable Built Environment.” in Teaching Carbon-Neutral Design in North America: Award-winning Architectural Design Studio Methodologies, 1st ed., London: Routledge, 2025, pp. 274–290. ([Link](#))
- 2023 Sha, Y., **Yang, Y.**, Zhang, X., “French Institutions in Modern Shanghai.” in French Architecture in Shanghai, Tongji University Press Co., Ltd, pp. 23–64. (ISBN: 9787560869605)

Dissertation & Theses

- 2024 **PhD in Systems Engineering.** “A Data-Driven Agent-Based Mobility Simulation Model and Its Integration into Urban Design and Planning.” ([Link](#))
- 2019 **Master of Science.** “Mobility-Driven Urban Design.” ([Link](#))
- 2017 **Master of Architecture.** “Historical Architectural Activities in Shanghai During World War II 1937-1945: Design, Construction, and Policymaking.”

GRANTS & FUNDS

- 2025 OCT **Martinson Block Grant. \$5K.** Thomas Jefferson University
 “Robotic Hot-Wire Cutting for Self-Stabilizing Lightweight Shell Structures”
 PI: **Yang Yang**, Co-PI: Yao Lu

- 2025 JUL **Faculty Seed Grant. \$5K.** Thomas Jefferson University
 “Smart Navigation for Neurodiverse Users: Using Built Environment Data for More Inclusive Urban Mobility”
 PI: **Yang Yang**
- 2024 OCT **Smart & Healthy Cities Seed Grant. \$10K.** Jefferson Institute for Smart & Healthy Cities
 “Designing Inclusive Urban and Building Mobility Systems for Neurodiverse Populations: Leveraging Agent-Based Simulation and Participatory Modeling”
 PI: **Yang Yang**, Co-PI: Sabra Townsend
- 2023 MAY **Ignite Fellow for New Ventures. \$120K.** Cornell CTL
 “Urbano.io - The Only Mobility Simulation Platform for Urban Design.”
 Fellow Recipient: **Yang Yang**
- 2022 SEP - 2023 SEP **Ignite Innovation Acceleration. \$50K.** Cornell CTL
 “Urbano.io - The Only Mobility Simulation Platform for Urban Design.”
 PI: Timur Dogan, Project Team Members: **Yang Yang**, Patrick Kastner
- 2022 JUL – 2023 JUN **Smart & Healthy Cities Seed Grant. \$10K.** Jefferson Institute for Smart & Healthy Cities
 “Create a Smart Mobility Platform for Analyzing and Visualizing the Effects of Urban Mobility on Population Health in the Center City of Philadelphia.”
 PI: Peng Du, Co-PIs: **Yang Yang**, Mitchell A. Kaminski
- 2020 AUG – 2022 JUL **Small Grants Program. \$8K.** Cornell Atkinson Center for Sustainability
 “Energy and Mobility Aware Urban Design: A Mobility Simulator Assisting Urban Design Decision Making for Mitigating Energy Consumption and Transportation Emissions.”
 PI: **Yang Yang**

Declined Grant Proposals

- 2025 DEC **Climate Resilience Planning.** *William Penn Foundation*
 “Heat-Smart Mobility Planning: A Community Digital Twin for Equitable Cooling Access in Fairhill”
 PI: **Yang Yang**, Co-PIs: Edgar Stach, Christopher Pastore, Rosie E. Frasso
- 2024 MAR **Climate Solutions Fund.** Cornell Atkinson Center for Sustainability
 “Integrative Modeling of Building Energy and Urban Systems for Improved Load Forecasting and Decarbonization Planning.”
 PI: Timur Dogan, Co-PIs: **Yang Yang**, Lindsay Anderson
- 2023 OCT **NYSERDA PON 4393 Future Grid Challenge Round 4.** NYSERDA
 “Urban Simulation to Solve Future Grid Challenges.”
 PI: Timur Dogan, Co-PIs: **Yang Yang**, Patrick Kastner

TEACHING

Lecture Courses (LC) and Design Studios (DS)

- 2025 SP - 2026 SP **Coordinator & Instructor** for ARCH208 Visualization 3 – Digital Modeling (**LC**)
 Thomas Jefferson CABE

2024 FA - 2026 SP	Coordinator & Instructor for ARCH308/622 Visualization 4 - Advanced Visualization and Modeling (LC) Thomas Jefferson CABE
2022 FA – 2026 SP	Instructor for MUD600 Modeling Urban Environmental Performance (LC) Thomas Jefferson CABE
2026 SP	Instructor for ARCH506 Architecture Capstone Studio – Philadelphia Market East Urban Planning and Design (DS) Thomas Jefferson CABE (Co-Instructor: John Dwyer, Evan Pruitt)
2025 FA	Instructor for ARCH213 Architecture Foundation Studies (DS) Thomas Jefferson CABE
2025 SP	Co-Coordinator & Instructor for ARCH214 Architecture Foundation Studies (DS) Thomas Jefferson CABE (Co-Coordinator: Andrew Hart)
2024 FA	Instructor for ARFD101 Fundamental Design 1 and Visualization 1 (DS) Thomas Jefferson CABE
2023 SP	TA for CEE5665 Modeling and Optimization for Smart Infrastructure Systems (LC) Cornell CEE (Instructor: Samitha Samaranayake)
2022 FA	Instructor for MUD603 Performance-Driven Urban Design: Integrated Multi-Objective Optimization and Augmented Reality (DS) Thomas Jefferson CABE (Co-Instructor: Peng Du)
2019 FA	TA for ARCH5611 Environmental Systems I: Site and Sustainability (LC) Cornell AAP (Instructor: Timur Dogan)
2019 SUM	TA for ARCH6110 Computational Design (LC) and ARCH7111 Design A (DS) Cornell AAP (Instructor: Fleet Hower, Caroline O'Donnell, Laia Mogas, Jorge Duro, Biayna Bogosian)

INVITED PRESENTATIONS

Guest Lectures (GL), Workshops (WK), and Panels (PN)

2026 APR	"From Simulation to Design: Human-Centric Modeling for the Built Environment". University of Arizona (GL)
2025 NOV	"Simulation as Creative Practice". 2025 Future Cities Fourm (WK)
2025 OCT	"Simulation as Creative Practice: Modeling Human Behavior in the Living City". Creativity for Utopian Futures Panel Discussion, Thomas Jefferson University (PN)
2025 FEB	"Urban Data Mapping in Grasshopper". Drexel University (WK)
2024 NOV	"Computational Urban Design and Urban Analytics". 2024 Future Cities Fourm (WK)
2024 APR	"Human-Centric Simulation and Design of Built Environment". Lawrence Technology University (GL)
2023 MAY	"Urbano.io V2 Beta Workshop". NYC Department of Transportation (WK)
2023 FEB	"Mobility Simulation for Urban Design". School of Architecture, University of Technology Sydney (GL)
2023 OCT	"Modeling and Analyzing Urban Mobility System". Thomas Jefferson CABE (GL)

2021 OCT "Modeling and Analyzing Urban Mobility System". Thomas Jefferson CABE **(GL)**
 2021 SEP "Generate and Analyze Urban Mobility Solutions". Thomas Jefferson CABE **(WK)**
 2020 "Urbano: A Tool to Promote Mobility Aware Urban Design". Symposium on Simulation for Architecture and Urban Design **(WK)**
 2019 "Urbano: Mobility Modelling and Simulation in Grasshopper3D". Performance Network **(WK)**
 2019 "Urbano: Mobility Modelling and Simulation in Grasshopper3D". Cornell AAP **(WK)**

SERVICE

Journal Reviewer

2026-Present Journal of Urban Planning and Development (1 review)
 2026-Present Journal of Urban Mobility (1 review)
 2026-Present Discover Cities (1 review)
 2026-Present City and Environment Interactions (2 reviews)
 2025-Present Simulation: Transactions of the Society for Modeling and Simulation (2 reviews)
 2025-Present Sustainable Cities and Society (2 reviews)
 2025-Present African Transport Studies (1 review)
 2024-Present Scientific Reports (1 review)
 2024-Present Technology | Architecture + Design (1 review)
 2024-Present Building and Environment (1 review)
 2024-Present Cities (3 reviews)
 2024-Present Networks and Spatial Economics (1 review)
 2023-Present Environment and Planning B: Urban Analytics and City Science (2 reviews)
 2023-Present Architectural Intelligence (1 review)

Conference Reviewer

2026 Association for Computer Aided Design in Architecture (ACADIA)
 2024-26 ARCC International Conference
 2024-25 International Conference on Advances in System Modeling and Simulation (SIMUL)
 2026 Annual Modeling and Simulation Conference (ANNSIM)

Conference Session Chairing & Panel Moderation

2026 **Session Chair**, ANNSIM, SimAUD, Orlando, Florida, USA
 2026 **Panel Moderator**, 7th International Smart and Healthy Cities Symposium, Philadelphia, USA
 2025 **Session Chair**, ANNSIM, SimAUD, Madrid, Spain

AWARDS

2020 M.S.AAD Award for Outstanding Performance in Architecture (Cornell University)
 2019 The Mary Miller Lyons Graduate Fellowship in Architecture (Cornell University)
 2019 NY Upstate Chapter of the American Planning Association Award for Student Project
 2018 The Honorable Mentions. Natian Cup International Design Competition

2017	First Prize. Young Architect Design Competition for Suqian City
2017	Shanghai Outstanding Graduates Award
2016	Third Prize. International Urban Design Competition for Shanghai Railway Station
2015	First Class China National Scholarship for Graduate Student
2014	Academy Award of the Department (Tongji University)
2014	First Class Saint-Gobain Scholarship (Tongji University)
2013	Second Class Jianlang Scholarship (Tongji University)
2013	Second Prize. East Asia Architecture and Urban Planning Competition

SOFTWARE & PRODUCTS

2025	Urbano (V2). A data-driven agent-based mobility simulation engine in Rhino & Grasshopper and ArcGIS. (Available on Rhino Package Manager)
2023	Urban Data Viewer. A data visualization and analysis platform for city-level energy and transportation systems. https://app.urbano.io
2022	Earthworms. A Python scripting environment for Rhino with enhanced interactivity and flexibility. http://www.food4rhino.com/app/earthworms
2019	Urbano (V1). Mobility modeling and simulation for parametric design in Rhino & Grasshopper. http://www.urbano.io

PATENT

2023 DEC	"Data-Driven Simulation and Analysis Framework for Multi-Modal Urban Mobility Systems." US Patent filed at Cornell CTL. Application No. 63433527
----------	---

MEDIA COVERAGE

2024 JAN	"Aspiring Women Inventors Still Stalled by University Patriarchy" - Bloomberg Law
2023 DEC	"Cornell Systems PhD Highlight: Yang Yang" - Cornell Systems Engineering News
2019 NOV	"New Free Software Helps Create Walkable Cities of The Future" - Forbes
2019 NOV	"Software Helps Planners Design Walkable Cities" - Cornell Chronicle

Last Updated: July 2026

